



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,486	01/26/2005	Ryuichi Kanamura	09792909-6090	3837

26263 7590 03/20/2007
SONNENSCHN NATH & ROSENTHAL LLP
P.O. BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606-1080

EXAMINER

PHAM, THANHHA S

ART UNIT	PAPER NUMBER
----------	--------------

2813

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
31 DAYS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/522,486	KANAMURA, RYUICHI	
	Examiner	Art Unit	
	Thanhha Pham	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/9/05.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to more than one species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1. The species listed below do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:
 - a. Species A, a process for production of a semiconductor device having interlayer insulating films including an organic insulating film, said process comprising: a step of sequentially forming on an interlayer insulating film three or more etching mask forming layers consisting of mutually different two or more kinds of film, a step of patterning the uppermost etching mask forming layer, thereby forming the uppermost mask layer, etching the next stage etching mask forming layer under the uppermost etching mask forming layer through the uppermost layer mask, thereby forming the next stage etching mask, etching the next stage etching mask forming layer after next through the next stage etching mask, thereby forming the next stage etching mask after next, and sequentially etching the etching mask forming layer under the etching mask forming layer formed thereon through the etching mask formed through the etching mask forming layer formed thereon, thereby forming the etching mask; and a step of etching the interlayer insulating film through the thus formed etching mask, thereby forming the wiring groove and the connecting hole, with one etching mask forming layer out of the three or more etching mask forming layers being formed as the

mask forming layer for the wiring groove pattern and one etching mask forming layer out of the remaining layers being formed as the mask forming layer for the connecting hole pattern. It appears that claim 1 reads on particular species A.

b. Species B, a process for production of a semiconductor device having interlayer insulating films including an organic insulating film, said process comprising; a step of patterning the third mask forming layer, thereby forming the third mask having the wiring groove pattern; a step of forming on the second mask forming layer including the third mask a resist mask having the connecting hole pattern; a step of etching the third mask, the second mask forming layer, and the first mask forming layer through the resist mask, and etching further the second insulating film, thereby making the connecting hole; a step of etching the second mask forming layer through the third mask, thereby forming the second mask having the wiring groove pattern and making the connecting hole to the middle of the first insulating film; a step of etching the first mask forming layer through the second mask, thereby forming the first mask having the wiring groove pattern, and etching the first insulating film remaining at the bottom of the connecting hole, thereby making the connecting hole; a step of etching the second insulating film through the first or second mask, thereby forming the wiring groove in the second insulating film. It appears that claims 2, 4-6, and 7 read on particular species B.

c. Species C, a process for production of a semiconductor device having interlayer insulating films including an organic insulating film, said process comprising: a step of forming on the third mask forming layer a first resist mask having the connecting hole pattern; a step of making the connecting hole in the third mask forming layer and the

Art Unit: 2813

second mask forming layer and to the middle of the third mask forming layer through the first resist mask; a step of forming on the third mask forming layer a second resist mask having the wiring groove pattern, and etching the third mask forming layer through the second resist mask, thereby forming the third mask; a step of etching the second mask forming layer and the second insulating film through the third mask, thereby making the connecting hole; a step of etching the second mask forming layer through the third mask, thereby forming the second mask having the wiring groove pattern and etching the first insulating film to its middle, thereby making the connecting hole; a step of etching the first mask forming layer through the second mask, thereby forming the first mask having the wiring groove pattern, and etching the first insulating film, thereby making the connecting hole; a step of etching the second insulating film through the first or second mask, thereby forming the wiring groove. It appears that claims 3, 4-6 and 8 read on particular species C.

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

2. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

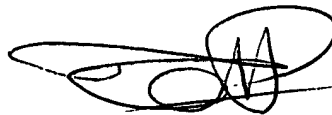
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

Art Unit: 2813

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



THANH S. PHAM
PRIMARY EXAMINER

TSP